

Organic Chemistry

- **Aromaticity:** Aromaticity refers to the stability and unique reactivity of cyclic compounds with alternating double bonds, exemplified by benzene.
- **Elimination:** In organic chemistry, elimination refers to a reaction where a molecule loses atoms or groups to form a new compound.
- **Functional Group:** A functional group is a specific atom or group of atoms within a molecule that determines its chemical properties.
- **Hydrocarbon:** Hydrocarbons are organic compounds consisting of hydrogen and carbon atoms, forming the backbone of many organic molecules.
- **Isomer:** Isomers are compounds with the same molecular formula but different structural arrangements, leading to different chemical and physical properties.
- **Stereochemistry:** Stereochemistry is the study of the three-dimensional arrangement of atoms in molecules and how it affects chemical properties.
- **Substitution:** Substitution in organic chemistry refers to a reaction where an atom or group is replaced by another atom or group.
- **Addition:** Addition in Organic Chemistry refers to a reaction where two or more molecules combine to form a single product.

Inorganic Chemistry

- **Valence:** Valence refers to the combining capacity of an atom determined by the number of electrons it can donate or accept.
- **Transition:** Transition refers to elements in the d-block of the periodic table known for their variable oxidation states and colored compounds.
- **Nonmetals:** Nonmetals are elements that lack metallic properties, such as conductivity, luster, and malleability, typically found on the right side of the periodic table.
- **Molecule:** A molecule is a group of atoms bonded together, representing the smallest fundamental unit of a chemical compound in inorganic chemistry.
- **Ionic:** Ionic refers to a chemical bond between two ions of opposite charges, typically a metal cation and a nonmetal anion.
- **Coordination:** Coordination refers to the formation of coordinate bonds between a central metal ion and surrounding ligands in inorganic molecules.
- **Compound:** A compound in inorganic chemistry is a substance composed of two or more different elements chemically bonded together.

- **Metals:** Metals are elements characterized by their high electrical conductivity, malleability, and ductility, typically found on the left side of the periodic table.

Analytical Chemistry

- **Quantitative Analysis:** Quantitative analysis in analytical chemistry refers to the determination of the amount or concentration of a substance in a sample.
- **Spectroscopy:** Spectroscopy is a technique used in analytical chemistry to study the interaction between matter and electromagnetic radiation.
- **Qualitative Analysis:** Qualitative analysis in Analytical Chemistry is the identification of elements or compounds present in a sample, without quantifying their amounts.
- **Mass Spectrometry:** Mass spectrometry is a technique used to analyze the mass-to-charge ratio of ions, providing information on the composition of molecules.
- **Chromatography:** Chromatography is a technique used in analytical chemistry to separate and analyze chemical compounds based on their properties.
- **Calibration Curve:** A calibration curve is a graph showing the relationship between the concentration of a substance and its measured response.
- **Analyte:** An analyte is the substance being analyzed in analytical chemistry, often measured and quantified to determine its characteristics.

Physical Chemistry

- **Chemical Reaction:** A chemical reaction is the process in which one or more substances are transformed into different substances through chemical bonds breaking and forming.
- **Electrochemistry:** Electrochemistry is the branch of physical chemistry that studies the relationship between electricity and chemical reactions in solutions.
- **Entropy:** Entropy is a measure of the randomness or disorder in a system, indicating the amount of energy unavailable for work.
- **Equilibrium:** Equilibrium in Physical Chemistry refers to a state where the rates of forward and reverse reactions are equal.
- **Kinetics:** Kinetics in Physical Chemistry is the study of the rates of chemical reactions and the factors that affect their speed.
- **Molecular Structure:** Molecular structure refers to the specific arrangement of atoms within a molecule, including bond lengths, bond angles, and overall geometry.
- **Quantum Mechanics:** Quantum mechanics is a branch of physical chemistry that studies the behavior of particles at the atomic and subatomic level.

- Thermodynamics: Thermodynamics is the branch of physical chemistry that deals with the relationships between heat, work, and energy in chemical systems.

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